

**REMARKS**

The Final Office Action mailed January 29, 2004, has been received and reviewed. Claims 1 through 16, and 24 through 37 are currently pending in the application. Claims 1 through 16, and 24 through 37 stand rejected. Applicants propose to amend claims 1, 9 and 24, and respectfully request reconsideration of the application as proposed to be amended herein.

**35 U.S.C. § 112 Claim Rejections**

Claims 1 through 16, and 24 through 37 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants respectfully traverse this rejection, as hereinafter set forth.

The Office Action alleges that

Amended independent claims 1 and 24 (see Paper No. 15 filed 24 September 2003) each newly recites the limitation that “the zone structure represents the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the one or more telepresence devices”. Similarly, amended independent claim 9 newly recites the limitation that “the zone structure represents the movement command in a telepresence-device independent format, the zone structure being a format independent of any of the one or more telepresence devices.” Although the specification describes conversion of raw data into a zone structure (see page 13, for instance), the subject matter of “telepresence-device independent formats” has not been described in the pending specification. In fact, immediately prior to this amendment, all three independent claims recited the limitation of operator/movement commands being in a common format. Such differing format types would appear to be at odds with each other. (Office Action, pp. 2-3, emphasis added).

Applicants respectfully disagree that the limitation of “a zone structure being a format independent of any of the one or more telepresence devices”, and similar language, is not described in the specification in such a manner as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time of the application was filed, had possession of the claimed invention. Applicants respectfully disagree with the present rejection. Generally, an application need not contain a word-for-word description of the claimed invention to satisfy the

written description requirement (i.e., the claims of the invention need not be identically written in the disclosure of the application). All that is required is that the application reasonably convey the claimed subject matter. *Ex parte Parks*, 30 USPQ 2d 1234 (B.P.A.I. 1994).

In the present application, Applicants' specification is replete with references to an independent-natured zone structure. Examples conveying such claimed subject matter include, among others:

The raw data generated by the input devices is processed into a common zone structure . . . [t]his modularized approach permits input devices to be easily interfaced with various telepresence devices. (Abstract).

The present invention defines a generalized zone structure that is translated to device movement. (Specification p. 4 as originally filed.)

The input conversion module 34 receives the raw input from the input devices 22 and converts the raw input into a zone structure . . . [t]he zone structure may use integers, for example, to define movement in a particular direction . . . [t]he zone structure thus enables any input device 22 to be compatible with one or more telepresence devices 60. (Specification p. 13 as originally filed.)

This ability to control the motion or other aspect of a telepresence device through any input device 22 is achieved in this embodiment through the use of generalized zones (Specification p. 11 as originally filed).

The commands are usually received from input devices and the present invention translates the raw data provided by the input devices into a zone structure that is understood by the potential telepresence devices . . . [t]he raw data of the input devices is converted to a zone structure, any input device is easily capable of controlling any telepresence device. (Specification pp. 4-5 as originally filed.)

[T]he use of the zone structure, allows any input device to control any telepresence device and input devices are interchangeable. (Specification p. 13 as originally filed.)

The illustrated embodiment of the present invention effectively isolates the input devices 22 from the telepresence devices 60 such that any input device 22 can be used to control any one or more of the telepresence devices 60. (Specification p. 11 as originally filed.)

The modularization of the software components combined with the generalized zone concept allows the systems and methods of the present invention to be easily expanded to encompass new devices and new uses. (Abstract).

A telepresence system . . . comprising: . . . an input conversion module, the input conversion receiving raw data from at least one of the plurality of input

devices and converting the raw data to a zone structure; and a plurality of device modules corresponding to the plurality of telepresence devices, wherein the device modules receive the zone structure and convert the zone structure to movement commands for each respective telepresence device; . . . (Claim 24 as originally filed.)

In a system having input devices and telepresence devices, a method for controlling on or more identified telepresence devices . . . comprising the steps of: . . . converting the raw data into a zone structure, wherein the zoned structure is representative of movement commands; processing the zone structure with a device module for each identified telepresence device to obtain the movement commands for each identified telepresence device . . . (Claim 9 as originally filed.)

[T]he telepresence system as described herein is easily adaptable to any input device, new or different telepresence devices are easily added and controlled. (Specification pp. 16-17 as originally filed.)

[T]he input conversion module 34 and the device modules 32 allow any of the input devices 22 to control any of the instruments or hardware component or devices comprising telepresence devices 60. (Specification p. 14 as originally filed.)

Because of the ample disclosure relating to the use of an intermediate zone structure that allows for conversion of the zone structure to commands that can cause interoperability with a myriad of telepresence devices, Applicants respectfully submit that ample disclosure exists to support the limitation that “the zone structure represents the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the one or more telepresence devices”, as claimed by Applicants. Therefore, Applicants respectfully request that the rejection be withdrawn.

### 35 U.S.C. § 102(b) Anticipation Rejections

#### Anticipation Rejection Based on U.S. Patent No. 5,182,641 to Diner et al.

Claims 1 through 4, 6 through 16, 24 through 34, 36 and 37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Diner et al. (U.S. Patent No. 5,182,641). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found,

either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

In the Office Actions' Response to Arguments, the Examiner states that:

The applicants contend the cited prior art of Diner et al. (US 5,182,641) neglects to teach converting the raw data into a zone structure wherein the zone structure represents the operator commands in a telepresence-device independent format. However, the examiner respectfully disagrees. Diner explicitly discloses, "hand-controller coordinates [i.e. raw data] are transformed [i.e. converted to an intermediate telepresence-device independent format] to correspond with [i.e. to be accepted/converted to] the coordinates of a selected camera [i.e. telepresence device commands]" (see Column 2, Lines 40-41).

Applicants respectfully disagree with the characterization that Diner discloses **ANY** conversion or devices configured for conversion of data to a device independent format, as claimed by Applicants.

#### Independent Claim 1

The Office Action alleges that:

Regarding claim 1, Diner discloses a telepresence system for allowing an operator [Fig. 1, 19] to interact with a remote operating environment, the system comprising: one or more input devices [Fig. 1, 21], wherein the one or more input devices produce raw data representative of operator commands; and **input conversion module for converting the raw data into a zone structure** wherein the zone structures represents the operator commands in a telepresence-device independent format **[NO CITATION TO DINER FOR THIS ELEMENT]**; one or more device modules corresponding to one or more telepresence devices [Fig. 1, 13'-17'], the one or more device modules for converting the zone structure into telepresence device commands specific to an associated one of the one or more telepresence devices, the zone structure being a format independent of any of the one or more telepresence devices, the telepresence device commands resulting from at least a portion of the operator commands; and a configuration module for associating a specific one of the one or more input devices corresponding to the zone structure with a specific one of the one or more telepresence devices which responds to the telepresence device commands resulting from the zone structure (see Column 4, Line 15-Column 5, Line 37). (Office Action pp. 3-4, emphasis added).

Applicants reaffirm the previous arguments that **nothing** within the Diner reference describes conversion modules configured to convert the raw input data into an abstract zone structure that is independent of an input device and an output device. Furthermore, the Office Action is silent as to a citation within Diner that corresponds to Applicants' claimed element of "an input conversion module configured to convert the raw data into a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any one of the one or more input devices" as claimed by Applicants in amended independent claim 1.

Specifically, regarding claim 1 and claims 2 through 8 and 37 depending therefrom, Diner discloses a "television system for viewing a workspace using at least one monitor and one or more cameras and perhaps lighting elements." (Col. 1, lines 65-67.) Diner specifically discloses and as characterized in the Office Action's Response to Arguments citations, (i) "That transformation of hand-controller coordinates to selected televisions camera coordinates is conventional" (col. 5, lines 16-18); (ii) "If the hand-controller coordinates are transformed to correspond with the coordinates of a selected camera, the graphics will indicate that fact" (col. 2, lines 40-42); and (iii) "the operator assigns the monitors to up to four of the five cameras and changes these assignments as the need arises" (col. 5, lines 35-37).

Diner does not appear to disclose, as claimed by Applicants in amended independent claim 1,

A telepresence system for allowing an operator to interact with a remote operating environment, the system comprising:

one or more input devices, the one or more **input devices configured to produce raw data** representative of operator commands;

**an input conversion module configured to convert the raw data into a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any one of the one or more input devices;**

one or more device modules corresponding to one or more telepresence devices, the one or more device modules **configured to convert the zone structure into telepresence device commands** specific to an associated one of the one or more telepresence devices, **the zone structure being a format independent of any of the one or more telepresence devices**, the telepresence

device commands resulting from at least a portion of the operator commands; and a configuration module configured to associate a specific one of the one or more input devices corresponding to the zone structure with a specific one of the one or more telepresence devices which responds to the telepresence device commands resulting from the zone structure. (Emphasis added.)

Diner does not disclose any intermediate telepresence device-independent format but rather discloses a direct scaling of coordinates commensurate with the corresponding field of view (e.g., zoom magnitude) of the selected camera. Specifically from Diner, “hand-controller coordinates are **transformed to correspond** with the coordinates of a **selected camera**” (col. 2, lines 40-42; emphasis added). In direct contradiction, Applicants’ invention as claimed is drawn to, among other things, “an input conversion module configured to **convert the raw data into a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any one of the one or more input devices**”.

Clearly, the Diner reference does not and cannot anticipate under 35 U.S.C. § 102(b) as no intermediate data formatting **transformation** process is disclosed. Accordingly, amended independent claim 1 and claims 2 through 8 and 37 depending therefrom, are allowable over the cited reference and the rejection should be withdrawn.

#### Independent Claim 9

Regarding claim 9 and claims 10 through 16 depending therefrom, Applicants reiterate that Diner discloses a “television system for viewing a workspace using at least one monitor and one or more cameras and perhaps lighting elements.” (Col. 1, lines 65-67.) Diner specifically discloses in the Office Action’s Response to Arguments citations, (i) “That transformation of hand-controller coordinates to selected televisions camera coordinates is conventional” (col. 5, lines 16-18); (ii) “If the hand-controller coordinates are transformed to correspond with the coordinates of a selected camera, the graphics will indicate that fact” (col. 2, lines 40-42); and (iii) “the operator assigns the monitors to up to four of the five cameras and changes these assignments as the need arises” (col. 5, lines 35-37).

Diner does not appear to disclose, as claimed by Applicants in amended independent claim 9,

In a system having input devices and telepresence devices, a method for controlling one or more associated telepresence devices with a selected input device, the method comprising the steps of:

**receiving raw data representative of movement commands from the selected input device;**

**converting the raw data into a zone structure representative of the movement commands in a telepresence-device independent format, the zone structure being a format independent of any one of the input devices and any one of the one or more associated telepresence devices;**

when the selected input device is selectively associated with the one or more associated telepresence devices, processing the zone structure with a device module corresponding to each of the one or more associated telepresence devices to obtain telepresence device commands corresponding to at least a portion of the movement commands for each of the associated telepresence devices; and

transmitting the movement commands to the associated telepresence devices. (Emphasis added.)

Applicants herein sustain the above-recited arguments, namely, that Diner does not disclose any intermediate telepresence device-independent format but rather discloses a direct scaling of coordinates commensurate with the corresponding field of view (e.g., zoom magnitude) of the selected camera. Specifically from Diner, “hand-controller **coordinates** are **transformed to correspond** with the coordinates of a **selected camera**” (col. 2, lines 40-42; emphasis added). In direct contradiction, Applicants’ invention as claimed is drawn to, among other things, “**converting the raw data into a zone structure representative of the movement commands in a telepresence-device independent format, the zone structure being a format independent of any one of the input devices and any one of the one or more associated telepresence devices**”.

Clearly, the Diner reference does not and cannot anticipate under 35 U.S.C. § 102(b) as no intermediate data formatting **transformation** process is disclosed. Accordingly, amended independent claim 9 and claims 10 through 16 depending therefrom, are allowable over the cited reference and the rejection should be withdrawn.

Independent Claim 24

Regarding claim 24 and claims 25 through 36 depending therefrom, Applicants reiterate that Diner discloses a “television system for viewing a workspace using at least one monitor and one or more cameras and perhaps lighting elements.” (Col. 1, lines 65-67.) Diner specifically discloses in the Office Action’s Response to Arguments citations, (i) “That transformation of hand-controller coordinates to selected televisions camera coordinates is conventional” (col. 5, lines 16-18); (ii) “If the hand-controller coordinates are transformed to correspond with the coordinates of a selected camera, the graphics will indicate that fact” (col. 2, lines 40-42); and (iii) “the operator assigns the monitors to up to four of the five cameras and changes these assignments as the need arises” (col. 5, lines 35-37).

Diner does not appear to disclose, as claimed by Applicants in amended independent claim 24,

A telepresence system for allowing an operator to interact with a remote operating environment, the telepresence system comprising:

    a plurality of input devices;

    a plurality of telepresence devices, wherein one or more of the telepresence devices is configured to be controlled by one of the plurality of input devices and one or more of the telepresence devices is configured to provide a visual representation of the operating environment;

    a computer comprising:

        an input conversion module **configured to receive raw data representative of operator commands from at least one of the plurality of input devices and further configured to convert the raw data to a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the plurality of input devices and any of the plurality of telepresence devices;** and

        a plurality of device modules corresponding to the plurality of telepresence devices configured to receive the zone structure and convert the zone structure to movement commands corresponding to the operator commands for each respective telepresence device; and

    a communication link for transmitting the movement commands to the telepresence devices. (Emphasis added.)

Applicants herein sustain the above-recited arguments, namely, that Diner does not

disclose any intermediate telepresence device-independent format but rather discloses a direct scaling of coordinates commensurate with the corresponding field of view (e.g., zoom magnitude) of the selected camera. Specifically from Diner, “hand-controller **coordinates** are **transformed to correspond** with the coordinates of a **selected camera**” (col. 2, lines 40-42; emphasis added). In direct contradiction, Applicants’ invention as claimed is drawn to, among other things, “**an input conversion module configured to receive raw data representative of operator commands . . . and further configured to convert the raw data to a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the plurality of input devices and any of the plurality of telepresence devices**”.

Clearly, the Diner reference does not and cannot anticipate under 35 U.S.C. § 102(b) as no intermediate data formatting **transformation** process is disclosed. Accordingly, amended independent claim 24 and claims 25 through 36 depending therefrom, are allowable over the cited reference and the rejection should be withdrawn.

### 35 U.S.C. § 103(a) Obviousness Rejections

#### Obviousness Rejection Based on U.S. Patent No. 5,182,641 to Diner et al.

Claims 5 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Diner et al. (U.S. Patent No. 5,182,641). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 5 and 35 are improper because the elements of the *prima facie* case of obviousness are not met. Specifically, the rejection fails to meet the criterion that the prior art reference must teach or suggest all the claim limitations.

Regarding claim 5 which indirectly depends from amended independent claim 1, Applicants reiterate that Diner discloses a “television system for viewing a workspace using at least one monitor and one or more cameras and perhaps lighting elements.” (Col. 1, lines 65-67.) Diner specifically discloses in the Office Action’s Response to Arguments citations, (i) “That transformation of hand-controller coordinates to selected televisions camera coordinates is conventional” (col. 5, lines 16-18); (ii) “If the hand-controller coordinates are transformed to correspond with the coordinates of a selected camera, the graphics will indicate that fact” (col. 2, lines 40-42); and (iii) “the operator assigns the monitors to up to four of the five cameras and changes these assignments as the need arises” (col. 5, lines 35-37).

Diner does not appear to disclose, as claimed by Applicants in amended independent claim 1 from which claim 5 depends through claim 37,

A telepresence system for allowing an operator to interact with a remote operating environment, the system comprising:

one or more input devices, the one or more **input devices configured to produce raw data representative of operator commands**;

**an input conversion module configured to convert the raw data into a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any one of the one or more input devices;**

one or more device modules corresponding to one or more telepresence devices, the one or more device modules **configured to convert the zone structure into telepresence device commands specific to an associated one of the one or more telepresence devices, the zone structure being a format independent of any of the one or more telepresence devices**, the telepresence device commands resulting from at least a portion of the operator commands; and

**a configuration module configured to associate a specific one of the one or more input devices corresponding to the zone structure with a specific one of the one or more telepresence devices which responds to the telepresence device commands resulting from the zone structure.** (Emphasis added.)

Applicants herein sustain the above-recited arguments, namely, that Diner does not disclose any intermediate telepresence device-independent format but rather discloses a direct scaling of coordinates commensurate with the corresponding field of view (e.g., zoom magnitude) of the selected camera. Specifically from Diner, “hand-controller **coordinates** are **transformed to correspond** with the coordinates of a **selected camera**” (col. 2, lines 40-42; emphasis added). In direct contradiction, Applicants’ invention as claimed is drawn to, among other things, “an input conversion module configured to convert the raw data into a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any one of the one or more input devices”. Therefore, Applicants respectfully request that the rejection to claim 5 be withdrawn.

Regarding claim 35 which depends from amended independent claim 24, Applicants reiterate that Diner discloses a “television system for viewing a workspace using at least one monitor and one or more cameras and perhaps lighting elements.” (Col. 1, lines 65-67.) Diner specifically discloses in the Office Action’s Response to Arguments citations, (i) “That transformation of hand-controller coordinates to selected televisions camera coordinates is conventional” (col. 5, lines 16-18); (ii) “If the hand-controller coordinates are transformed to correspond with the coordinates of a selected camera, the graphics will indicate that fact” (col. 2, lines 40-42); and (iii) “the operator assigns the monitors to up to four of the five cameras and changes these assignments as the need arises” (col. 5, lines 35-37).

Diner does not appear to disclose, as claimed by Applicants in amended independent claim 24 from which claim 35 depends,

A telepresence system for allowing an operator to interact with a remote operating environment, the telepresence system comprising:

- a plurality of input devices;
- a plurality of telepresence devices, wherein one or more of the telepresence devices is configured to be controlled by one of the plurality of input devices and one or more of the telepresence devices is configured to provide a visual representation of the operating environment;

a computer comprising:

an input conversion module **configured to receive raw data representative of operator commands from at least one of the plurality of input devices and further configured to convert the raw data to a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the plurality of input devices and any of the plurality of telepresence devices;** and

a plurality of device modules corresponding to the plurality of telepresence devices configured to receive the zone structure and convert the zone structure to movement commands corresponding to the operator commands for each respective telepresence device; and

a communication link for transmitting the movement commands to the telepresence devices. (Emphasis added.)

Applicants herein sustain the above-recited arguments, namely, that Diner does not disclose any intermediate telepresence device-independent format but rather discloses a direct scaling of coordinates commensurate with the corresponding field of view (e.g., zoom magnitude) of the selected camera. Specifically from Diner, “hand-controller **coordinates are transformed to correspond with the coordinates of a selected camera**” (col. 2, lines 40-42; emphasis added). In direct contradiction, Applicants’ invention as claimed is drawn to, among other things, “**an input conversion module configured to receive raw data representative of operator commands . . . and further configured to convert the raw data to a zone structure representative of the operator commands in a telepresence-device independent format, the zone structure being a format independent of any of the plurality of input devices and any of the plurality of telepresence devices**”. Therefore, Applicants respectfully request that the rejection to claim 35 be withdrawn.

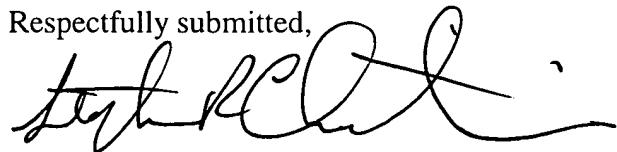
### ENTRY OF AMENDMENTS

The proposed amendments to claims 1, 9 and 24 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search. Finally, if the Examiner determines that the amendments do not place the application in condition for allowance, entry is respectfully requested upon filing of a Notice of Appeal herein.

### CONCLUSION

Claims 1-16 and 24-37 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



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